

US EPA RECORDS CENTER REGION 5



466403

Monthly Oversight Report 55
ACS NPL Site
Griffith, Indiana
July 2, 2005 - August 5, 2005



BLACK & VEATCH

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Black & Veatch Special Projects Corp.

USEPA/RAC VII
American Chemical Service, Inc. RAO (057-ROBF-05J7)

BVSPC Project 46526
BVSPC File C.3
August 12, 2005

Mr. Kevin Adler
U.S. Environmental Protection Agency
77 W. Jackson Boulevard (SR-6J)
Chicago, Illinois 60604-3590

Subject: Monthly Oversight Summary Report
No. 55 for July 2005

Dear Mr. Adler:

Enclosed is the Monthly Oversight Summary Report No. 55 for July 2005 for the American Chemical Service, Inc. Superfund Site in Griffith, Indiana.

If you have any questions, please call (312-683-7856) or email (campbelllm@bv.com).

Sincerely,

BLACK & VEATCH Special Projects Corp.

Larry M. Campbell, P.E.
Site Manager

Enclosure

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Monthly Oversight Summary Report No. 55
ACS Superfund Site WA57, 46526.238

Reporting Period: Month of July (July 2 - August 5, 2005)

BVSPC O/S Dates: July 26 & 28 & August 1, 2005 (Mr. Campbell)

Personnel Summary Affiliation	No. of Personnel	Responsibility
Montgomery Watson Harza	3	Respondent's General Contractor
Indiana Department of Environmental Management	1	State Regulatory Agency
Black & Veatch Special Projects Corp.	1	USEPA Oversight Contractor
ISOTEC	4	Chemical Oxidation Contractor
PSA Environmental	2	Geoprobe Contractor
Boart Longyear	4	Drilling Contractor
Austgen	1	General Contractor
Microbac	1	GWTP Sampling Contractor

Construction Activities

Major Activities:

- Montgomery Watson Harza continued operating the groundwater treatment plant, the in-situ soil vapor extraction systems, and the air sparge systems.
- ISOTEC and PSA Environmental started the third full-scale in-situ chemical oxidation injection program in the off-site South Area groundwater plume area.
- Boart Longyear started installing temporary wells as part of the second phase of the lower aquifer investigation.
- Microbac (formerly Simalabs) collected samples from the groundwater treatment plant for routine process monitoring.
- Montgomery Watson Harza held a construction coordination meeting on July 29 and the monthly operation status meeting on August 4.

Activities Performed:

Montgomery Watson Harza (MWH) reported (August 4) that the groundwater treatment plant (GWTP) was operational 100% of the time (all 31 days) in July, processing 1,015,014 gallons of groundwater at

average rates of 25 to 40 gpm. MWH reported that groundwater was being pumped to the GWTP from all trench and well sources during June. Microbac (formerly Simalabs) collected samples from the GWTP for routine process monitoring.

MWH continued to operate the On-Site Containment Area (ONCA) SBPA and Off-Site Containment Area (OFCA) in-situ soil vapor extraction (ISVE) systems and the OFCA and SBPA air sparge systems.

MWH reported that thermox 1 operated for 26 of the 31 days in July, processing 1,000 cfm of vapors from the ONCA SBPA ISVE system, collecting vapors from 23 of the 46 ISVE wells. MWH reported that it replaced the temperature probe, installed new gasket material in the influent piping, and returned thermox 1 to operations.

MWH reported that thermox 2 operated for 28 of the 31 days in July, processing 2,000 cfm of vapors collected from all 42 OFCA ISVE wells and aeration tank T102. MWH reported that the conductivity probe failed on July 29, and that thermox 2 was down until a new probe was shipped to the site. During this period, MWH reported that it performed normal maintenance on thermox 2, including checking the packing in the scrubber tower. A new conductivity probe was installed, and thermox 2 was returned to operations on August 3. MWH reported that operation of the GWTP continued while thermox 2 was out of service by routing the vapors from aeration tank T102 through thermox 1.

MWH reported that it pumped 54 gallons of product from five ISVE wells in the SBPA on July 12. MWH reported that it used a special pump to remove 40 gallons of the more viscous product from well SVE61 on July 14. The product was manually transferred to the oil holding tank T6 in the GWTP.

MWH previously reported that all 21 SBPA dual-phase extraction (DPE) well pumps had been removed from their ISVE wells for inspection, repair, and/or replacement. MWH reported that it successfully repaired all 21 DPE pumps. The pumps were disassembled and cleaned and reassembled. They were prepared for use by adding new stainless steel discharge pipe, a check valve prior to the pitless adaptor, new air tubing, and new quick disconnects. MWH reported that it blew out all existing air lines from the blower shed to the DPE wells and then reinstalled 19 DPE wells on August 3. DPE pumps were not installed in SVE61 and SVE65 because of the very viscous product in these wells. This product will be removed manually using the new special pneumatic pump.

MWH reported that the planned upgrades to the SBPA ISVE system are still in progress but details are not complete or approved for installation.

MWH reported that ACS had not reported a recurrence of odors in its break room on the SBPA.

MWH reported that the third full-scale in-situ chemical oxidation (ISCO) application began on July 26. ISOTEC and PSA-Environmental mobilized to the site on July 25 with their equipment and supplies. MWH conducted a health and safety briefing of all ISOTEC and PSA personnel on July 26, and the contractors set up their equipment and began injecting modified Fenton's reagent in the off-site South Area plume area. As MWH had proposed (and EPA had approved), injections are focused in a smaller area than during the first two applications, concentrating where contaminant levels are highest. MWH reported

that the spacing of injection points, quantity of injected fluids, and concentrations of chemicals are identical to those in prior applications.

MWH reported that injections were started in the yard of the residence at 1002 Reder Road (completed on July 28), continued on the east shoulder of Colfax Avenue (completed on July 29), and were concluded in the west shoulder of Colfax Avenue (completed on August 1). A total of 143 points were injected during this period, averaging more than 20 points per day.

MWH reported that ISOTEC and PSA personnel completed their first rotation of this third application round on August 1 and left the site. Personnel will return to the site on August 8 to complete the injection points beneath Colfax Avenue. Personnel from Walsh & Kelly will then provide traffic control as one lane at a time of Colfax Avenue will be closed for this work.

MWH reported that the second phase of the lower aquifer investigation began on July 26. Boart Longyear mobilized to the site on July 25 with its equipment and supplies. MWH conducted a health and safety briefing of all Boart personnel on July 26, and the contractor set up its roto sonic drill rig and began drilling and sampling the soils in the upper aquifer, the confining clay layer, and the lower aquifer.

Boart initially began drilling on LA15, the westernmost temporary well being installed as part of the second phase of the lower aquifer investigation. Boart drilled to the confining clay layer and sampled the upper aquifer sand and the confining layer clay. It then seated an 8-in.-diameter casing into the confining layer clay [at about 14 feet below ground surface (bgs)], tested the seal for water leakage (satisfactory), and then conducted continuous drilling and sampling of the lower aquifer sands into the underlying clay till (at about 82 feet bgs).

Boart then installed a 2-in.-diameter PVC monitoring well with a 10-foot-long screen in the borehole. The screen was set between 70 and 80 feet bgs, the annulus was backfilled with sand to above the top of the screen, and the remainder of the borehole annulus was backfilled with bentonite grout to the surface. Boart installed monitoring wells in LA15 and LA14 at the western end of the line of temporary wells in the second phase of the lower aquifer investigation.

MWH reported that Boart experienced significant “blow-in” of the lower aquifer sands into the drill casing when the soil collection tube was withdrawn from the borehole. This “blown-in” material then had to be removed in order to advance the borehole. Accordingly, MWH proposed modifying the sampling procedure to eliminate the need for continuous sampling of all remaining boreholes, provided the stratigraphy at LA11 on the eastern end of the line of temporary wells was consistent with that identified in LA15 and LA14 and existing monitoring wells MW52 and MW53.

MWH reported that Boart drilled LA11 with continuous sampling. However, at about 70 feet bgs, a hydraulic hose ruptured on the drill rig and hydraulic oil sprayed on the drill rods and the drill water sump. Because of the potential “contamination” of the borehole and the lower aquifer sands from the hydraulic oil, MWH elected to abandon the LA11 borehole and grouted it to the surface with bentonite grout.

Boart relocated the drill rig about 7 feet west and redrilled LA11 to the underlying till. After seating the 8-in.-diameter casing in the confining clay layer, Boart direct drilled without sampling to about 70 feet bgs and then performed continuous sampling to the bottom of the borehole. Boart then installed a 2-in.-diameter PVC well in the LA11 borehole.

MWH reported that the stratigraphy at LA11 was sufficiently similar to that at other lower aquifer wells that continuous sampling could be discontinued below the clay confining layer in the remaining wells. Accordingly, Boart drilled without sampling and installed temporary well LA13.

MWH reported that it had measured VOC concentrations (3 to 11.6 ppm) in the upper 6 feet of the lower aquifer sands at LA11 using a photoionization detector (PID). MWH proposes to install a new monitoring well near LA11 to sample the VOCs in the upper portion of the lower aquifer.

By the end of the reporting period, Boart had drilled and installed temporary wells LA11, LA13, LA14, and LA15. It completed installing surface completions (concrete pads and protective casing) around these wells.

Boart abandoned well LA5 (installed during the first phase of the lower aquifer investigation) by drilling to 18 feet bgs (1 foot deeper than the casing depth) and backfilling the hole and casing with bentonite grout.

Boart completed its first rotation of the second phase of the lower aquifer investigation on August 5 and left the site. Personnel will return to the site on August 8 and begin the second rotation of the lower aquifer investigation on August 9.

MWH reported that it had directed Boart to replace its existing Bobcat loader with one that had an operating back-up alarm.

MWH reported that it met on August 2 with four local residents who had complained about the noise made by the blowers. MWH showed the residents the noise-suppression housing installed at blower ME-102 and provided them a tour of the GWTP. MWH reported that the residents were very impressed with the reduction in noise effected by the housing and were satisfied with this effort and MWH's responsiveness to their concerns.

MWH conducted a construction coordination meeting on July 29 (postponed from July 28) and the July operation & maintenance (O&M) status meeting at its Chicago office on July 1. BVSPC attended this meeting.

Because of the lack of field activity until the end of the month, weekly reports are not attached. Weekly reports and photographs will be prepared in the future if there are sufficient field activities to warrant such reporting. However, correspondence, log book notes and photographs of the daily activities are attached. BVSPC conducted oversight of the field activities on July 26 and 28 and August 1.

Topics of Concern: None

Concern Resolution: None

Upcoming Activities:

- MWH to continue operating the GWTP and the OFCA and ONCA SBPA ISVE and air sparge systems.
- MWH to monitor odors in the ACS break room.
- MWH and Global to remediate the leaking tubes in thermox 2 heat exchanger.
- MWH to continue pumping product from selected ONCA SBPA DPE wells
- MWH to complete Phase 2 of the lower aquifer investigation and pumping test.
- MWH and ISOTEC to complete the third full-scale chemical oxidation injection program in the South Area plume
- MWH will continue weekly construction coordination meetings at the site during the lower aquifer investigation and the chemical oxidation injections.

Signature: Larry Campbell

Date: August 12, 2005

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**SITE STATUS MEETING MINUTES
FOR JULY 29, 2005 MEETING
AMERICAN CHEMICAL SERVICE, NPL SITE
GRIFFITH, INDIANA**

MEETING DATE: Friday, July 29, 2005

MEETING TIME: 10:00 a.m.

MEETING LOCATION: ACS Site

ATTENDEES: Kevin Adler – U.S. EPA (by phone)
Prabhakar Kasarabada – IDEM
Larry Campbell – Black & Veatch (by phone)
Chris Daly – MWH (by phone)
Lee Orosz – MWH
Jennifer Smith – MWH (by phone)
Peter Vagt – MWH (by phone)
Adam Norris – MWH
Carlos Claros – MWH

TOPICS:

SITE STATUS

Chemical Oxidation

As of July 29, injection has been completed at 69 of the 143 total points. The injection points in the yard at 1002 Reder Road have been completed. Work is currently progressing in the east shoulder of the Colfax Avenue. It is anticipated that ISOTEC will complete the 16 points in the east shoulder today and will relocate their equipment to the other side of the road. ISOTEC will then begin at the injection points in the west shoulder of Colfax Avenue.

The crew will work through the weekend. Assuming that we continue to make progress at the current rate, all of the locations outside the Colfax Avenue roadway will be completed by the end of the day, August 1st, and the crew will demobilize. ISOTEC will return to the site on August 8 to begin injection in Colfax Avenue roadway.

No health and safety incidents have occurred during the execution of this task. A Kick-off/Health & Safety Meeting was held on July 26. Daily Health & Safety have been conducted each morning prior to beginning work.

Lower Aquifer Investigation, Phase 2

The drilling subcontractor, Boart Longyear, arrived at the ACS site on Tuesday, July 26th to startup phase 2 of the Lower Aquifer Investigation. By Thursday, only one of the five planned lower aquifer wells had been completed. Drilling conditions were challenging since hydrostatic pressures were causing "blow-in" of aquifer material. This slowed

down progress. To speed up the process, MWH proposed to conduct continuous physical logging on only three of the Lower Aquifer Well boreholes instead of all five. This is reasonable since the boreholes are 50 feet apart and sufficient stratigraphic information will be gained from three borings. EPA approved the change by return email on Friday.

The lower aquifer work crew will continue with the 10-day working shift through the weekend and demobilized at noon on Thursday, July 5. They will return to start another week of work on Tuesday, August 9, 2005.

General Site Health and Safety

There have been no health and safety issues since the last meeting on July 1st. Mosquitoes and wasps are numerous across the ACS site. Bug spray is recommended for personnel who will be working outside.

Interaction with Community

MWH is coordinating a meeting with Mr. Howard Anderson to demonstrate the effectiveness of the noise shield housing installed over Blower ME-102. MWH anticipates that this meeting will occur on or about August 3rd and will notify the project team when a meeting date and time has been scheduled.

LOOK AHEAD

Field Events

- Lower Aquifer Event, Drilling – continued
- Third Chemical Oxidation Treatment – through August 1st, August 8-13

Future Meetings

- Monthly Site Meeting – Thursday, August 4, 2005, 10 a.m. at MWH Chicago
-

CDC/CAD/PIV

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**SITE STATUS MEETING MINUTES
FOR AUGUST 4, 2005 MEETING
AMERICAN CHEMICAL SERVICE, NPL SITE
GRIFFITH, INDIANA**

MEETING DATE: Thursday, August 4, 2005

MEETING TIME: 10:00 a.m.

MEETING LOCATION: MWH Chicago Office

ATTENDEES: Kevin Adler – U.S. EPA (by phone)
Larry Campbell – Black & Veatch
Carlos Claros – MWH
Amy Clorc – MWH
Chris Daly – MWH
Justin Finger – MWH
Adam Norris – MWH (by phone)
Lee Orosz – MWH (by phone)
Peter Vagt – MWH

TOPICS:

The agenda and usual discussion sequence was re-arranged to accommodate the schedule for several of the meeting participants. The following is the discussion sequence during the meeting.

SITE STATUS

Chemical Oxidation (Chem-Ox)

The first phase of the Chem-Ox injection event was completed on Monday, August 1. 143 injection points have been completed. No health and safety incidents have occurred during the execution of this task. ISOTEC and PSA have demobilized and will return to the site on August 8 to begin injection in Colfax Road.

A Kickoff/Health & Safety Meeting will be held on the morning of Monday, August 8th before work in the roadway begins. There are 67 injection points that will go into Colfax Avenue. As part of the traffic control plan, injections into the roadway will take place between the hours of 9 am and 3 pm each day. Walsh & Kelly will be providing traffic control. Daily Health & Safety meetings will be conducted each morning prior to beginning work.

Lower Aquifer Investigation, Phase 2

A second 10-day work session has been scheduled to complete the 2nd phase of the Lower Aquifer Investigation. Field conditions continue to be a challenge, primarily when drilling between the depths of 50 to 70 feet below ground. As of Thursday, August 4th,

four lower aquifer wells have been completed (LA-11, 13, 14, 15) and one well from the Phase 1 investigation has been abandoned (LA-5).

During the drilling for lower aquifer location LA-11 at the east end of the investigation area, the PID indicate the presence of VOCs in aquifer samples collected from the upper part of the lower aquifer. MWH recommended that an additional monitoring well be placed in the upper part of the lower aquifer at that location and U.S. EPA approved the plan. It will be constructed with stainless steel materials, and installed during the next work rotation.

The Lower Aquifer Investigation crew demobilized from the first 10-day work rotation at noon on Thursday. They will return Monday afternoon to begin a second ten-day rotation on Tuesday morning, August 9th. The planned work will include installing the remaining wells for the lower aquifer investigation, developing those wells, and abandoning the five remaining well casings installed for the Phase 1 Lower Aquifer Investigation.

General Site Health and Safety

There have been no health and safety issues since the last meeting on July 29th. Mosquitoes and wasps are numerous across the ACS site. Bug spray is recommended for personnel who will be working outside.

It was noted that the Bobcat skid loader used by Boart Longyear for the Lower Aquifer Investigation did not have a working backup alarm. Boart Longyear was informed and they agreed to work with the rental company to assure that the Bobcat used for the next work rotation will have a functioning backup alarm.

Groundwater Treatment Plant (GWTP) Status

The GWTP ran 100 percent of the time during July at rates between 25-40 gallons per minute (gpm). The approximate total volume of water treated was 1,015,000 gallons. On July 12th, all 21 of the dual phase extraction (DPE) pumps were removed from the SBPA wells. The pumps were taken apart and cleaned. New stainless steel pipe discharges, check valves, air-lines, and quick disconnects were all installed on 19 of the 21 pumps. The DPE pumps were placed back into the SBPA wells on August 3, 2005. In the future, inspections of the DPE wells will need to occur to verify the proper upkeep.

Special pumps will be needed to handle the thick located in SVE-61 and SVE-63. MWH ordered a new air driven pump that is capable of pumping low viscosity substances and installed it in SVE-61. As of August 4, it has been effectively pumping product. If it continues to run without issues, a similar pump will be placed in SVE-63.

Off-Site Area/SBPA ISVE Systems

The SBPA ISVE System operated 83 percent of the time during July, with 23 of the 46 wells active. The system was down due to various maintenance actions performed on Thermal Oxidizer 1 (TOX1).

The Off-Site ISVE System was operational 90 percent of the time during July, with all of

the 42 wells active. The heat relays for one of the blowers were tripping and have been replaced.

TOX1 was taken offline various times during July to replace the temperature probe, flame detector, and gaskets on the scrubber.

TOX2 ran with no issues until July 29th, when the conductivity probe malfunctioned. A caustic leak had dripped onto the probe causing an electrical short and system shutdown. A new probe arrived on August 3rd and the unit was repaired at that time. While TOX2 was down, the unit was inspected and serviced.

Interaction with Community

On August 2, 2005, MWH coordinated a meeting with Mr. Howard Anderson and three other local residents to demonstrate the effectiveness of the noise shield housing installed over Blower ME-102. The residents were given a tour of the ACS GWTP and a demonstration of the effectiveness of the noise shield housing. Prabhakar Kasarabada, of the Indiana Department of Environmental Management (IDEM), was also present for the meeting. The resident expressed satisfaction with the reduced noise level coming from the plant.

SBPA ISVE System Upgrades

MWH continues to prepare for the construction of the upgrades to the SBPA ISVE System.

LOOK AHEAD

Field Events

- Lower Aquifer Event, Drilling – remobilization on August 9
- Third Chemical Oxidation Treatment, Road Work – August 8

Health & Safety Look Ahead

- During this time of year, wasps and mosquitoes are a nuisance and a potential health risk at the site.
- Safety issues associated with the Lower Aquifer Investigation.
- Safety issues associated with the Chemical Oxidation Treatment, including traffic control.

Future Meetings

- Monthly Site Meeting – Thursday, August 11, 2005, 10 a.m. at the ACS Trailer
- With both the Lower Aquifer and Chemical Oxidation work, meetings are occurring on a weekly basis.

ALC/CAI/PJV

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Remedial Progress Report	July-05	Report Date: 8/3/2005																					
GWTP & Dewatering																							
The GWTP was operational for 31 days out of 31 days in July (100%). Total Gallons treated = 1,015,014 gallons since 6/24/05 (35 days).		<u>Tables, Graphs & Figures</u> Table - Effluent Summary Graphs - Off-Site Dewatering Graphs - SBPA Dewatering																					
SBPA ISVE System																							
System was operational 26 out of 31 days in July (83%). System monitoring was conducted on 7/19/05. The next monitoring event is scheduled for 8/16/05.		Active Wells (23 of 46 total) SVE-43 SVE-67 SVE-45 SVE-68 SVE-47 SVE-70 SVE-48 SVE-71 SVE-55 SVE-74 SVE-56 SVE-75 SVE-57 SVE-76 SVE-58 SVE-83 SVE-59 SVE-85 SVE-60 SVE-86 SVE-63 SVE-87 SVE-64																					
<u>Tables, Graphs & Figures</u> Table - Sampling Data Graph - Mass Extraction Graph - Total VOC removal - data under validation	<table border="1"> <thead> <tr> <th>Product Removal</th> <th>7/12/2005</th> <th>7/14/2005</th> </tr> </thead> <tbody> <tr> <td>SVE-52</td> <td>3 gal.</td> <td>x</td> </tr> <tr> <td>SVE-53</td> <td>40 gal.</td> <td>x</td> </tr> <tr> <td>SVE-62</td> <td>3 gal.</td> <td>x</td> </tr> <tr> <td>SVE-72</td> <td>5 gal.</td> <td>x</td> </tr> <tr> <td>SVE-88</td> <td>3 gal.</td> <td>x</td> </tr> <tr> <td>SVE-61</td> <td>x</td> <td>40 gal.</td> </tr> </tbody> </table>	Product Removal	7/12/2005	7/14/2005	SVE-52	3 gal.	x	SVE-53	40 gal.	x	SVE-62	3 gal.	x	SVE-72	5 gal.	x	SVE-88	3 gal.	x	SVE-61	x	40 gal.	
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<u>Tables, Graphs & Figures</u> Table - Sampling Data Graph - Mass Extraction Graph - Total VOC removal - Data under validation																							
Comments																							
Data presented here is for informational purposes only. Not all data presented in this report has been validated.																							

Table
Summary of Effluent Analytical Results
Groundwater Treatment System
American Chemical Service NPL Site
Griffith, Indiana

Event Date	Month 95 4/11/2005	Month 96 5/19/2005	Month 97 6/29/2005	Effluent Limits	Lab Reporting Limits
pH	7.25	8.18 /J	7.39 /J	6-9	none
TSS	1.00	NS	NS	30	10
BOD	< 2	NS	NS	30	2
Arsenic	11.4 /UB	NS	NS	50	3.4
Beryllium	2.7 B/UB	NS	NS	NE	0.2
Cadmium	2.6 B/B	NS	NS	4.1	0.3
Manganese	19.3 /B	NS	NS	NE	10
Mercury	ND	NS	NS	0.02 (w/DL = 0.64)	0.64
Selenium	ND	NS	NS	8.2	4.3
Thallium	3.5 B/UB	NS	NS	NE	5.7
Zinc	14.1 B/UB	NS	NS	411	1.2
Benzene	ND /UJ	0.50 U/	0.50 U/	5	0.5
Acetone	1.9 J/J	2.8 B/ 10 UBJ	1.5 J/	6,800	3
2-Butanone	1.4 J/J	2.5 U/	2.5 U/	210	3
Chloromethane	ND /UJ	0.50 U/	0.50 U/	NE	0.5
1,4-Dichlorobenzene	ND /UJ	0.50 U/	0.50 U/	NE	0.5
1,1-Dichloroethane	ND /UJ	0.50 U/	0.50 U/	NE	0.5
cis-1,2-Dichloroethene	0.62 /J	0.50 U/	0.50 U/	70	0.5
Ethylbenzene	ND /UJ	0.50 U/	0.50 U/	34	0.5
Methylene chloride	2.3 /J	0.26 JB/ 10UB	2.5 B/ UB	5	0.6
Tetrachloroethene	0.19 J/J	0.50 U/	0.50 U/	5	0.5
Trichloroethene	ND /UJ	0.50 U/	0.50 U/	5	0.5
Vinyl chloride	0.16 J/J	0.50 U/	0.50 U/	2	0.5
4-Methyl-2-pentanone	ND /UJ	2.5 U/	2.5 U/	15	3
bis (2-Chloroethyl) ether	ND	NS	NS	9.6	9.6
bis(2-Ethylhexyl) - phthalate	ND	NS	NS	6	6
4 - Methylphenol	ND	NS	NS	34	10
Isophorone	ND	NS	NS	50	10
Pentachlorophenol	ND	NS	NS	1	1
PCB/Aroclor-1016	ND	NS	NS	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1221	ND	NS	NS	0.00056 (w/DL = 0.1 to 0.9)	0.92*
PCB/Aroclor-1232	ND	NS	NS	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1242	ND	NS	NS	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1248	ND	NS	NS	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1254	ND	NS	NS	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1260	ND	NS	NS	0.00056 (w/DL = 0.1 to 0.9)	0.5

Notes:

Bolded result indicates a exceedence of the
pH data is expressed in S.U.

Metals, VOC, SVOC and PCB data is expressed

ND = Not detected

NS = This analyte was not sampled or analyzed

NE = No effluent limit established.

DL = Detection limit

* = Approved SW-846 method is incapable of achieving effluent limit.

DRAFT VERSION

For Informational Purposes Only

Not all data presented here has been validated
Notes and suffix definitions have not been updated

Suffix Definitions:

/ = Data qualifier added by laboratory

/ = Data qualifier added by data validator

J = Result is estimated

B = Compound is also detected in the blank

UJ = Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value

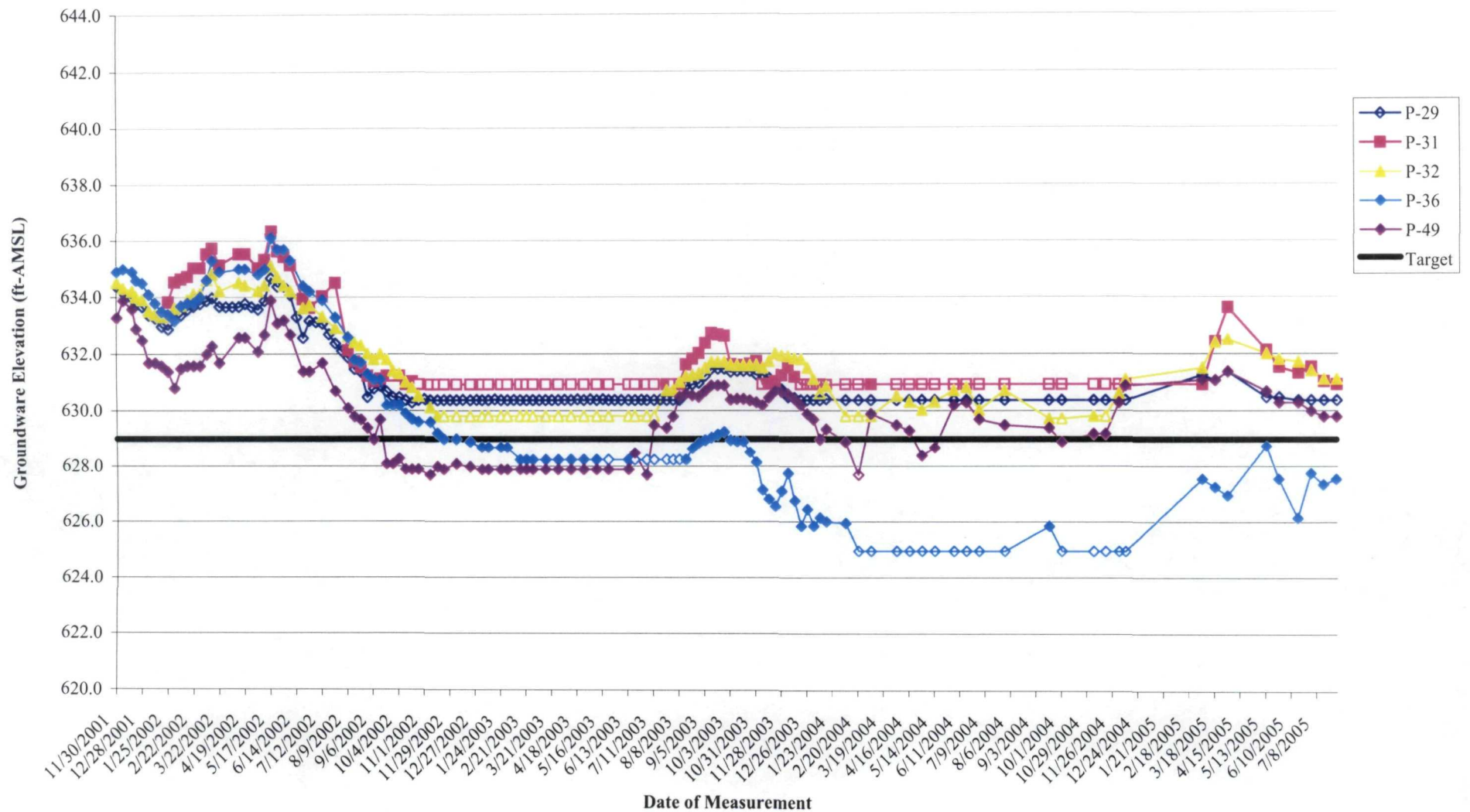
JB = Result is detected below the reporting limit and is an estimated concentration.

The compound is also detected in the method blank resulting in a potential high bias

UB = Compound or analyte is not detected at or above the indicated concentration due to blank contamination

UBJ = Analyte is not detected at or above the indicated concentration due to blank contamination, however the calibration was out of range. Therefore the concentration is estimated.

Figure 1
SBPA Water Level Status
ACS NPL Site
Griffith, Indiana



Note:

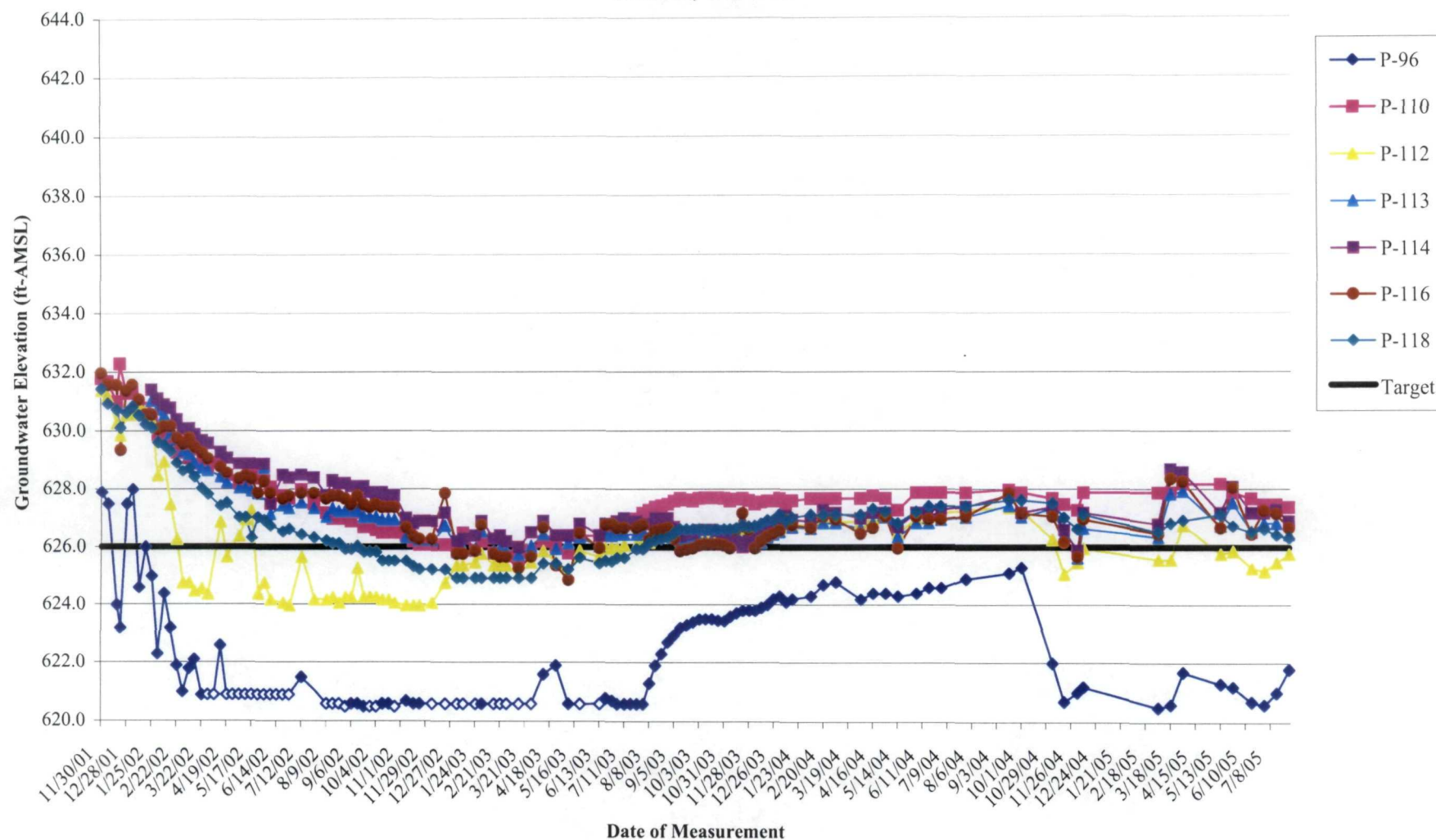
Hollow points represent dry piezometers (data used for graphing purposes only).

The bottom elevation of the piezometers may vary due to silting of the well or removal of silt.

ALC/jmf/CAD

J:/209/0603/0301/BWES Data/BWES Performance.2005.xls/On-S

Figure 3
Off-Site Water Level Status - Piezometers
Groundwater Monitoring
ACS NPL Site
Griffith, Indiana



Note:
Hollow points represent dry piezometers
(data used for graphing purposes only). The bottom elevation of the piezometers may vary due to silting

26 July 05

(29)

0725 Arrive On Site

Sunny, Partly Cloudy, Warm 9F

Personnel On Site

Lee Cross	MWH	1	2
Carlos Carlos	MWH	1	
Naron Sence	PSA Envt	1	
Rebt Thompson	" "	1	
Mike Temple	ISOTEC	1	
Gary Schreiner	"	1	
Prasad Kakankar	"	1	
Adam Norris	MWH		2
Maad Smith	MWH		2
Tim Kirkland	Austgen		
Zalco Davidson	Boart Longyear		2
Justin Miller	"		2
James Robinson	"		2
Mark Dogan	"		2
Larry Campbell	BUSPC	1	2

0730 H&S Mtg for Isotec & PSA

personnel - Those attending - #1 above

0800 H&S Mtg for Boart - Attend. #2 above

0845 Boart Started Steam Cleaning equipment.

JM Campbell

(30)

- 0950 Photo 76-1 looking S at
ISOTEC mixing tank setup
inside fence of residence at
1002 Reder Road. Preparing
to start mixing chemicals
- 0952 Photo 76-2 looking E at
orange marks on grass showing
N. edge of injection area on
property at 1002 Reder Rd.
- 1009 Photo 76-3 looking S at
Boart Sturman casing
for lower aquifer investigation
- 1019 Photo 76-4 looking W along
line of wells for LA invest.
near RR tracks
- 1030 Return to trailer to review
ISOC & LA reports
- 1150 Return to LA invest. area
BLX is setting up rotasonic
drill rig at ~~LA15~~ ^{LA15} ~~location~~ ^{from}
- 1210 Photo 76-5 looking S at
rotasonic rig prior to drilling
- 1215 BLX started drilling ~~LA15~~ ^{LA15}
- 1217 Photo 76-6 looking S
at sample being retrieved into

Jm Campbell

(31)

Plastic Sleeve

- 1225 Photo 76-7 looking W at retrieved
soil from 5' to 15' clay layer found
at 12.5 ft bgs.
- 1300 Break for lunch
- 1400 observe ISOC injections at
1002 Reder Rd.
- 1405 Photo 76-8 looking S at
multiple injection points
- 1448 Photo 76-9 looking S at
ring of bentonite around drill hole
to seal mud pit for further
drilling
- 1449 Photo 76-10 looking S at
rotasonic beam being raised
into position
- 1452 Photo 76-11 looking SE at stack
of 8" ϕ dia surface casing to be
seated into clay layer @ 14' to
seal off upper aquifer
- 1502 Photo ~~76-12~~ ⁷⁶⁻¹² looking SE showing surface
casing shaking up 1.5'
- 1505 Photo 76-13 looking E at driller
sealing casing to mud pan
- 1530 Driller installed 8" ϕ casing to 14'

Jm Campbell

(32)

- then cleaned out ^{cuttings from} casing,
1545 Filled casing full of H₂O to
check for seal into clay. Must
wait 15 min w/ no leak.
1600 No water leaked from casing
so consider have a good seal
1605 Driller continued drilling thru
clay layer w/ 4" ϕ core barrel
followed w/ 6" ϕ casing into
Lower Aguater
continued to find clay layer
extended to 20' ft bgs
1655 Photo 76-14 ~~strike~~ looking SW
at sample from 25'-30' being
extruded into plastic sleeve.
All was LA sand LA zone
1715 Left drill site - FW 15
at 37' bgs
1735 visited 1500 site - Will
complete 22 points today
1740 Left site for day

Jim Campbell

28 July 05

1150 Arrive on site

Partly cloudy, calm, warm 75°F

1 Personnel on site

Lee Orosz	MWH
Zeb Davidson	Boart
James Robinson	"
Mark Dorn	"
Justin Miller	"
Carlos Claros	MWH
Aaron Sewe	PSA Env
Robt Tieman	" "
Mike Temple	ISOTAC
Gary Schreiber	"
Steven Major	"
Psand Kakaula	"
Adam Norris	MWH
Tim Kirkland	Austgen
Mike Larson	"
Mike Cheneveth	Microbac
Prebaker, K. S. (K. S. Prebaker)	IDEM
LM Campbell	BUSPC

Jim Campbell

(34)

1155 visit ISOC injection site

Nearly complete injecting in
yard of 1002 Rader Rd.

1200 Break for lunch

1240 visit LA invest. site

1255 Photo 76-15 looking W
at well #15 installed1325 Adam reported that TW15
drilled to 87', encountered
basal fill at 82' bgs. Set
well screen from 70.5' - 80.5'1327 Resumed drilling TW14
Hit clay \approx same depth as
TW15. Set 8" casing &
performed water seal task ok
Now drilling into clay1400 Construction mty cancelled
because some personnel stuck in
traffic jam. Rescheduled
for Friday 7-29-05 at 10 AM1435 Photo 76-16 mixing drilling
mud to stabilize LA sands1513 Photo 76-17 looking E at
Adam using PID to check for
chemicals in LA sands C 40-45'
bgs

Jim Campbell

(35)

1530 Driller having difficulty
advancing hole below 50' bgs1547 Leave LA drill site to inspect
ISOC opns.1554 Photo 76-18 looking down at
DPE pumps in GWTB going
prepared to return to ONCA wells1618 Photo 76-19 looking N at
row of ISOC injection points & PSD
installing injection in background
Now injection on E row of Colfax.
Completed points in property
at 1002 Rader Rd.1620 Disc w/ ISOTEC field mgr.
They expect to complete ROW
work by Monday afternoon
8-1-05

1630 Left site for day

Jim Campbell

(36)

29 July 05

1000 Construction Coord. Mtg

Personnel Attending

At Site

Lee Orosz MWHT

Adam Norris MWHT

Carlos Claros MWHT

Prabhakar IDEM

By Phone

Pete Vast MWHT

Jennifer "

Chris Daly "

Kevin Adler USEPA

Larry Campbell BUSPC

Chemax - Have completed 69 points to date. Expect to complete 23

points today. Expect to complete all

Non-roadway points by Monday.

Yesterday, completed all points in yard.

Will complete E shoulder of Colfax

today & move to west side.

Prabhakar ^{Mr} asked if injection parameters would be changed in areas where chem. concentrations have significantly increased. Pete

Jim Campbell

(37)

Said all parameters would remain the same, but future testing might indicate need for 4th round of injections.

Lower Aquifer - Have had daily H&S tailgate mtgs. Have not detected any vapors in breathing zone.

Well LA15 drilled to 87', set well screen at 70.5'-80.5' bgs.

Finished drilling LA-14 to 85' bgs. Will set well screen at 72'-82' bgs.

MWHT proposed discontinuation of continuous sampling in LA because of problem of heaving sand into casing when sampler withdrawn. Will take continuous samples at E end of line at LA-11. If stratigraphy is same as at LA 14 & 15, will not take continuous samples at other wells - just direct drill below clay to ~10' above basal till.

MWHT will start development of LA15 soon. Will pump development water into tanks at well head - then pump from tanks to GLTP.

J M Campbell

(38)

Public mtg w/ Howard Andersen
has been postponed till later
date to allow more citizens to
attend - purpose - to discuss
reduction in noise & blowers M&I 02

GWTP - Working well

H&S - Reported that H&S mtgs
were held Tues 26 July w/ ISOTEC & PSA @ 7:30 AM, and
w/ Board @ 8 AM. Both firms ^(ISOTEC) PSA
had at least 1 employee who was
"new" to HAZWOPER work

Pump Test

Will be rescheduled a week
later. to begin Mon Aug 22

Next mtgs - Aug 4/ & 11 at 10 AM

1045 Mtg over

~~Jim Campbell~~

(39)

1 August 05

0825 Arrive onsite

Clear, calm, warm 77°F

Personnel Onsite

Lee Orosz	MOHA
Carlos Claros	"
Amy Clare	"
Justin Finger	"
Robert Tiennan	PSA Encl.
Baron Strase	" "
Mike Temple	ISOTEC
Gary Schreiber	"
Steve Meyer	"
Adam Norm	MWH
Mark Dorn	Boart
Zalos Davidson	"
James Robinson	"
Justin Miller	"
Tim Kirkland	Austgen
Larry Campbell	BUSAC

0930 Visit USCG Site

Completed 94 prints yesterday
for total of 133. Have only 10
prints remaining in New Plandome
locations. Expect to complete today

Jim Campbell

(40)

0935 Photo 76-20 looking SE
at PSA installing injection pt
inside fence in ONCA

0943 Photo 76-21 looking W at
ISOTEC mixing tanks & pumps

0954 Photo 76-22 looking SW at
PSA inserting "push rods" to
allow opening of screen at
bottom of rod. Note MWH
employee measuring vapors w/
PID (on left)

1030 Photo 76-23 looking E
at Bort Steam cleaning
drill rig thru bore holes

1055 Relocated to LA 14 west
site. Adam reported that
LA-11 had been drilled to 80' bgs
while withdrawing drill stem,
hydraulic hose on rig broke &
hydraulic fluid got into water
pit under rig. Concerned that
hydraulic fluid got into casing -
so hole grouted up. With
redrill LA-11A 7' W of
LA-11

Jim Campbell

(41)

1112 Photo 76-24 looking E showing
Protective caps & concrete pads
installed at LA 15 and LA 14.

1147 Photo 76-25 looking S at
Bort steam cleaning casing

1200 Break for Lunch

1300 Return to Site

1320 Photo 76-26 looking W at
Loc threading SS pipe for ONCA
SBPA 15E DPE wells pumps.

1326 Photo 76-27 looking NE at
Bort starting to drill LA-11A

1331 Photo 77-01 looking E at
Bort cleaning sand from mud
mud tub at LA 11A. Drilled casing
to 14.5' bgs

1346 Photo 77-02 looking E at water
holding tank - $\approx 1\frac{1}{2}$ " loss in 15 min. - OK

1400 Bort collected sample from 14' - 20' bgs
Drilled thru clay into sand. Anticipating
to direct drill to 70' bgs since close to
being LA-11

1515 Bort still advancing casing.
Now at 45' bgs - difficult drilling

1550 Leave site for day

Jim Campbell

(42)

4 August 05
1000 Construction Coordination Mtg
@ MWH Chicago office
Personnel Involved

At Site:

Lee Orosz MWH (phone)

Adam Norris MWH "

At MWH office

Pete Vast MWH

Carlos Claris "

Amy Clare "

Justin Finger "

Chris Daly "

Larry Campbell BUSPC

Kevin Adler EPA (phone)

H&S - Has been v. hot, but have good liquid control for still

Boart's Backup didn't have backup alarm. They will repair or replace at 2nd rotation

Lower Aquifer Investigation -

Because of difficulties drilling - will need a 2nd 10 day rotation to complete.

Because of PID hits in top

Jim Campbell

(43)

of LA Sands, MWH proposes to install new monitoring well screened just below clay confining layer. Boart has completed drilling & installed 2" ϕ POC ^{line} monitoring temp. wells at LA 15, 14, 11, 13 - all screened near 70'-80' bgs.

Surface completions (protective cap & concrete pad) have been installed

- Boart abandoned LA Phase 1 well LA 5 by drilling to 18' (1' below casing) & grouting to surface. Later, will cut off casing below ground.

- Boart & Adam decommissioning today. Will return to resume LA invest. on Tues 8/9/05

Chem Ox -

- All 143 injection points of 3rd Full Scale program (excluding those beneath Colfax Ave) have been completed on 8/1/05.

- Completed 58 points since last mtg.
- on 7/30/05, MWH observed high VOC reading on PID near power pole

- Amy Clare & Justin Finger were onsite

Jim Campbell

(44)

7/29/05 to gain experience
w/ ISOC work. Amy will
manage field effort next week
during injections beneath Colfax.

GWTP -

- Ran 100% in July, performed regular maintenance activities.
- All 21 DPE pumps from SBPA have been repaired. Added SS discharge pipe, check valve to pitless adaptor, quick disconnect & new air tubing.
- Blew out all air line at SBPA from DPE wells to blower shed
- MWH installed 19 DPE wells. But will use new spatial pneumatic pump to remove viscous product from SVE 61 & SVE 65.

ISVE Systems

- Thermox 1 - SBPA - Changed Temp probe. Changed gaskets on air inlet ducting
- Thermox 2 - ran well all month, but conductivity probe failed on 7/29/05. Thermox 2 down till

Jim Campbell

(45)

new probe arrives. During down time, MWH performed maintenance including checking the packaging

SBPA Upgrades

- MWH still evaluating equipment & Contractor options

Public Interaction

- On Aug 3, MWH met w/ Howard Anderson & 3 other local residents regarding noise complaint from GWTP. Prabhakar (IDEM) was also present. All were given a tour of GWTP and shown the noise suppression housing installed around blower ME-102. They were impressed w/ the noise reduction.
- No issues from ACS plant or resident at 1002 Cedar Road.

Look Ahead

- Chemox Inj. to resume in Colfax Ave next Monday 8 August
 - LA Invest. to resume Tue 9 Aug. Walsh Kelly will provide traffic control
- Next Mtg. Thurs Aug 11, 10AM at Site
1036 Mtg over

Jim Campbell



Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 76 Photo #1

Date: 07-26-05 Time: 0950

Photographer: Larry Campbell

Description: Photo facing south showing ISOTEC mixing tanks set up inside fence of residence at 1002 Reder Road, preparing to mix chemicals.

Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 76 Photo #2

Date: 07-26-05 Time: 0952

Photographer: Larry Campbell

Description: Photo facing east showing orange marks (see arrows) on grass delineating north edge of injection area on property at 1002 Reder Road.



Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 76 Photo #3

Date: 07-26-05 Time: 1009

Photographer: Larry Campbell

Description: Photo facing south showing Boart personnel steam cleaning casing for lower aquifer investigation. Cleaning water will be treated in the groundwater treatment plant.

Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 76 Photo #4

Date: 07-26-05 Time: 1019

Photographer: Larry Campbell

Description: Photo facing west showing staked locations for temporary wells for lower aquifer investigation. Existing MW52 and MW53 in midground of picture.



Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 76 Photo #5

Date: 07-26-05 Time: 1210

Photographer: Larry Campbell

Description: Photo facing south showing Boart roto sonic drill rig set up at temporary well LA15 location.



Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 76 Photo #6

Date: 07-26-05 Time: 1217

Photographer: Larry Campbell

Description: Photo facing south showing upper aquifer sand sample being retrieved into a plastic sleeve slipped over core barrel.



Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 76 Photo #7

Date: 07-26-05 Time: 1225

Photographer: Larry Campbell

Description: Photo facing west showing retrieved soil samples from 5' - 15' below ground surface (bgs). Confining clay layer found at 12.5' bgs.



Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 76 Photo #8

Date: 07-26-05 Time: 1405

Photographer: Larry Campbell

Description: Photo facing south showing multiple injection points in yard at 1002 Reder Road. Note geoprobe rig maneuvered on plastic mats to minimize damage to grass.



Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 76 Photo #9

Date: 07-26-05 Time: 1448

Photographer: Larry Campbell

Description: Photo facing south showing ring of bentonite around drill hole to seal mud pan for further drilling.



Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 76 Photo #10

Date: 07-26-05 Time: 1449

Photographer: Larry Campbell

Description: Photo facing south showing rotosonic rig being raised into position to continue drilling. Note mud pan placed over drill hole.



Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 76 Photo #11

Date: 07-26-05 Time: 1452

Photographer: Larry Campbell

Description: Photo facing southeast showing decontaminated rack of 8"-dia. surface casing to be seated into clay layer at 14' bgs to seal off upper aquifer.



Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 76 Photo #12

Date: 07-26-05 Time: 1502

Photographer: Larry Campbell

Description: Photo facing southeast showing 8"-dia. surface casing seated in clay and sticking up approximately 1.5'.



Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 76 Photo #13

Date: 07-26-05 Time: 1505

Photographer: Larry Campbell

Description: Photo facing east showing driller sealing 8"-dia. surface casing to mud pan with granular bentonite.



Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 76 Photo #14

Date: 07-26-05 Time: 1655

Photographer: Larry Campbell

Description: Photo facing southwest showing sample from 25' to 30' bgs being extruded into plastic sleeve. All of sample was sand. Note helper wearing hearing protection.



Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 76 Photo #15

Date: 07-28-05 Time: 1255

Photographer: Larry Campbell

Description: Photo facing west showing new PVC temporary well LA15 after installation and prior to installing protective cap.



Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 76 Photo #16

Date: 07-28-05 Time: 1435

Photographer: Larry Campbell

Description: Photo facing south showing Boart mixing bentonite drilling mud to stabilize lower aquifer sands.



Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 76 Photo #17

Date: 07-28-05 Time: 1513

Photographer: Larry Campbell

Description: Photo facing east showing Adam Norris using PID to check for VOCs in the LA sands from 40' to 45' bgs.



Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 76 Photo #18

Date: 07-28-05 Time: 1554

Photographer: Larry Campbell

Description: Photo facing west showing dual-phase extraction pumps in GWTP after being repaired. Note stainless steel discharge piping in foreground.



Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 76 Photo #19

Date: 07-28-05 Time: 1618

Photographer: Larry Campbell

Description: Photo facing north showing row of ISOC injection points on east shoulder of Colfax Ave. after completing all injection location in yard at 1002 Reder Road.



Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 76 Photo #20

Date: 08-01-05 Time: 0935

Photographer: Larry Campbell

Description: Photo facing southeast showing PSA installing injection point inside fence in OFCA.



Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 76 Photo #21

Date: 08-01-05 Time: 0943

Photographer: Larry Campbell

Description: Photo facing west showing ISOTEC mixing tanks set up in OFCA to inject on west side of Colfax Ave.



Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 76 Photo #22

Date: 08-01-05 Time: 0954

Photographer: Larry Campbell

Description: Photo facing southwest showing PSA inserting "push rod" to expose screen at bottom of well probe. Note MWH employee (L) monitoring VOCs with a PID.



Site: American Chemical Service, Inc.
 Proj. #: 46526
 Roll: 76 Photo #23
 Date: 08-01-05 Time: 1030
 Photographer: Larry Campbell
 Description: Photo facing east showing Boart employee steam cleaning rotosonic drill rig between borings.



Site: American Chemical Service, Inc.
 Proj. #: 46526
 Roll: 76 Photo #24
 Date: 08-01-05 Time: 1112
 Photographer: Larry Campbell
 Description: Photo facing east showing protective caps and concrete surface pads installed on LA15 and LA14.



Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 76 Photo #25

Date: 08-01-05 Time: 1147

Photographer: Larry Campbell

Description: Photo facing south showing Boart employee steam cleaning casing between borings.



Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 76 Photo #26

Date: 08-01-05 Time: 1320

Photographer: Larry Campbell

Description: Photo facing west showing Lee Orosz threading stainless steel pipe for ONCA SBPA ISVE DPE well pumps.



Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 76 Photo #27

Date: 08-01-05 Time: 1326

Photographer: Larry Campbell

Description: Photo facing northeast showing Boart set up to begin drilling LA11 at eastern end of temporary wells.